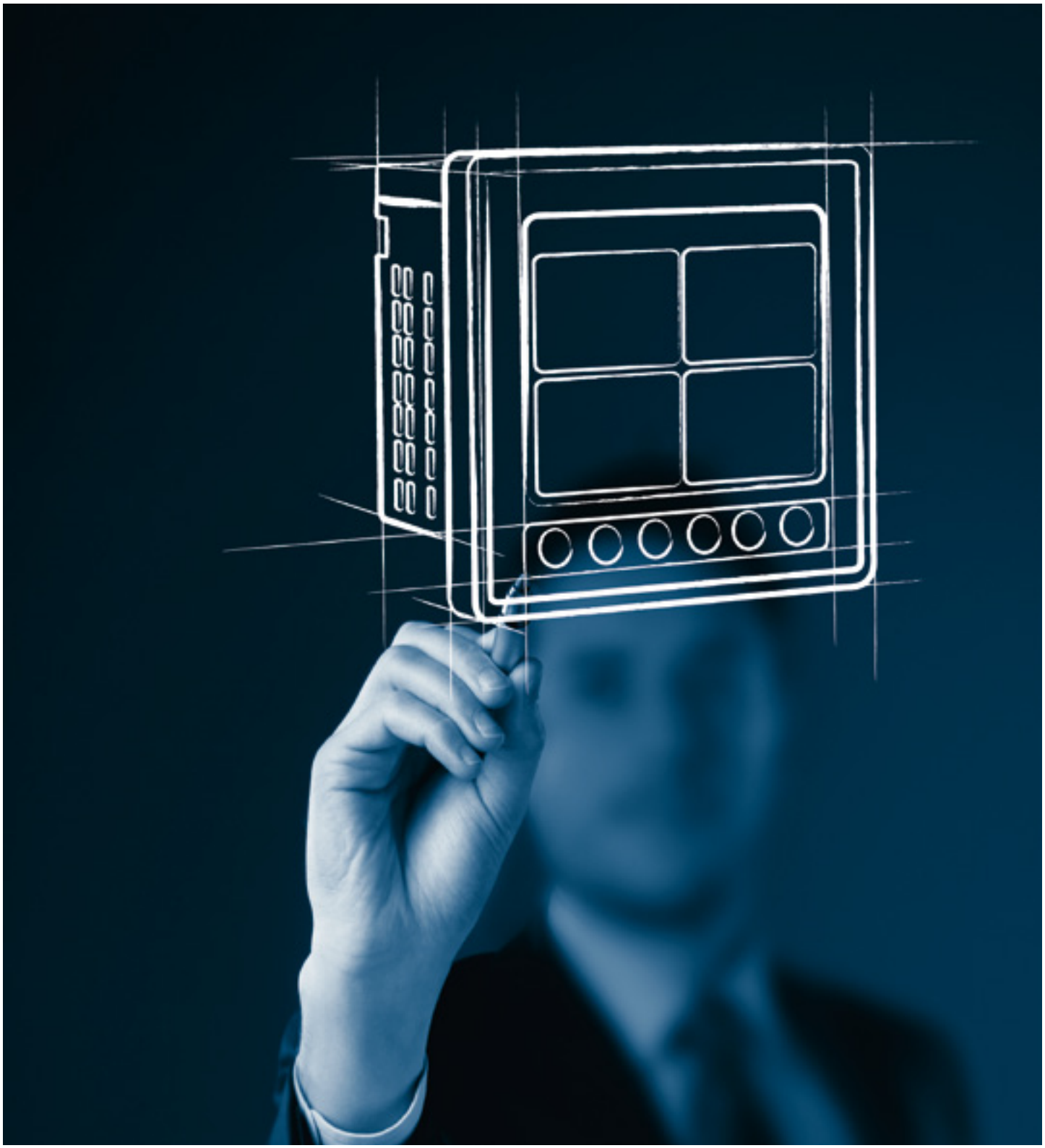
ENG

INSTRUMENTATION AND CONTROL

CONTROLLERS, PROGRAMMERS, MULTILOOPS

GEFRAN



THE ACKNOWLEDGED INTERNATIONAL LEADER

Thanks to forty years of experience, Gefran is the world leader in the design and production of solutions for **measuring, controlling, and driving industrial production processes.**
We have 14 branches in 12 countries and a network of over 80 worldwide distributors.

QUALITY AND TECHNOLOGY

Gefran components are a **concentrate of technology**, the result of constant study and **collaboration with major research centres**.
Gefran control instruments are characterised by continuous research and state-of-the-art technology, and provide **accurate control of variables such as temperature, pressure, force, humidity, and displacement.**
Gefran's know-how and experience guarantee **continuous** and practical solutions.

A COMPLETE LINE OF CONTROLLERS

Gefran offers a wide range of models, from **general purpose to advanced, high-performance solutions**, made with graphic devices.
Gefran Controllers can acquire one or more analogue inputs, transforming them into engineering units and comparing them with setpoints.
Advanced PID control algorithms with automatic calculation of parameters supply output signals for control of installed actuators.
In addition, they are **connectable in network** and **preset for remote access.**

SERVICES

PRE AND POST SALES
A team of Gefran experts works with the customer to select the ideal product for its application and to help install and configure devices (customercare@gefran.com).

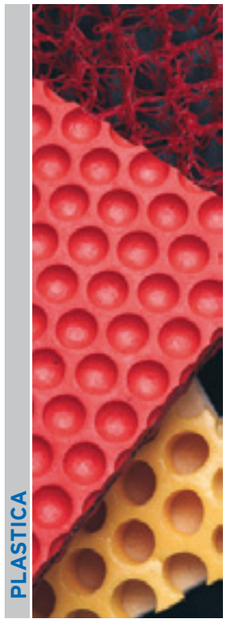
TRAINING
Gefran offers a wide range of courses at different levels for the technical-commercial study of the Gefran product range as well as specific courses on demand.

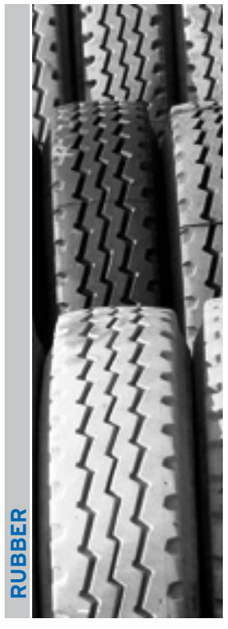
GF_eXpress

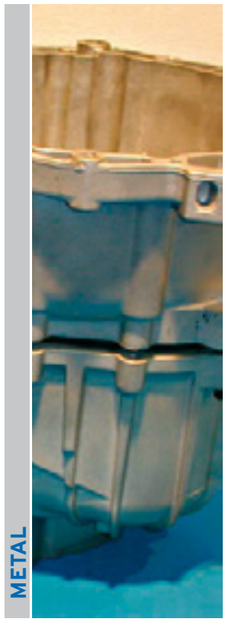
SOFTWARE
GF_eXpress

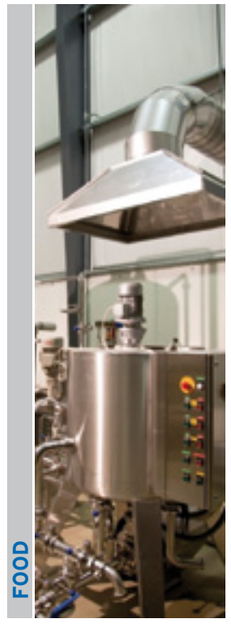
Configuration kit for Gefran instruments by means of PC (Windows environment). Lets you read or write all of the parameters of a single instrument via serial connection.

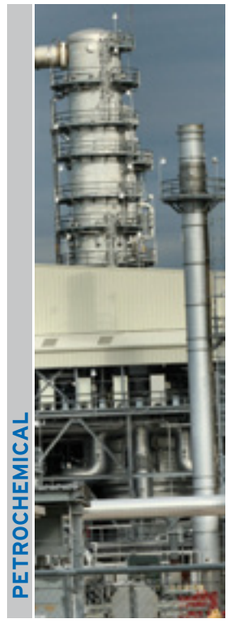
- A single software for all models
- Easy configuration
- Copy/paste, save recipe, trend functions
- Rapid configuration of instruments
- Saving and management of parameter recipes
- On-line trend and saving of historical data
- Recovery of factory settings
- Custom linearization
- On-line user manual

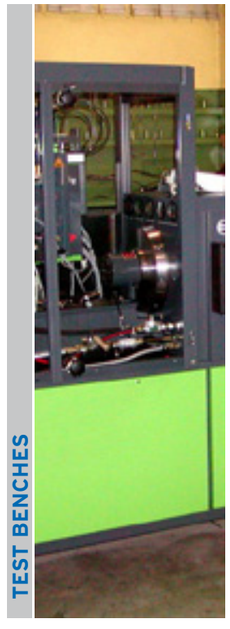


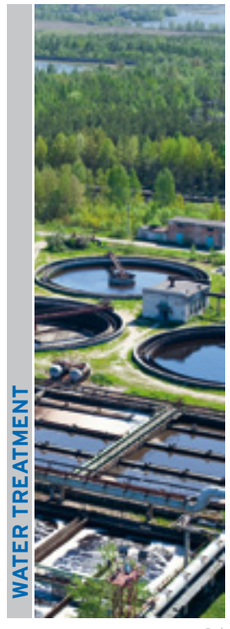


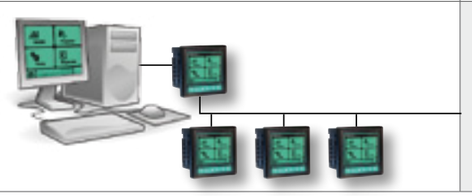










	GF_PROMER	GF_LOOPER
MONITOR		•
TREND DATALOG	•	•
RECIPES	•	•
PROGRAMS	•	
LOGIC BLOCK	•	
LOOP DETAIL	•	•
ALARMS	•	•
CONNECTIVITY 	•	•

MULTILOOP GRAPHIC CONTROLLERS GF_LOOPER

- **IP65**
  Front protection.
- **Control**
  Remoted control boards.
- **Display**
  TFT color graphics display 3.5" and 5.7", touch screen.
- **Graphics Pages**
  Monitor pages for all zones, single zone, alarms, trends, bargraph, clock.
- **Communication**
  Connections via Ethernet ports with Modbus protocol,
- **Datalog**
  Data storage with export of esv format

PROGRAMMERS/CONTROLLERS GRAPHIC 4 LOOP GF_PROMER

- **Graphics pages**
  Monitor pages with trend, bargraph, alarms, programme profile.
- **IP65**
  Front protection.
- **Display**
  TFT color graphics display 3.5" and 5.7", touch screen.
- **Programmes**
  Up to 100 programmes divided into 300 segments
- **Logic functions**
  Configurable logic blocks to create automatic or machine interlock sequences
- **Control**
  Remoted control boards.
- **Communication**
  Connections via Ethernet ports with Modbus protocol,
- **I/Os**
  I/O expansion cards (optional).

UNIVERSAL MODELS			ADVANCED MODELS		
Single display	Double display	Open frame	Double display		
				Valve controllers	Programmers for setpoint profiles
	1300		1800	1800V	1800P
	1200		1600	1600V	1600P
400 - 401	600		800	800V	800P
		600 OF			
Plastics, packaging, ovens			Furnaces, plants, process industry		

4-LOOP CONTROLLER	HIGH-PERFORMANCES			
	Triple display	LCD, touch screen display		
	High speed High accuracy	Graphic programmers	Graphic controllers	
		GF_Promer 5,7''	GF_Looper 5,7''	169x120 mm
	2500	GF_Promer 3,5''	GF_Looper 3,5''	96x96 mm (1/4 DIN)
				48x96 mm (1/16 DIN)
				48x48 mm (1/16 DIN)
				90x45x45 mm
GFXTERMO4				25x140x140 mm
	Plastics,, textile, process	Furnaces, heat treatments, climatic chambers, food, process heat		

UNIVERSAL MODELS

		400	401
INPUTS			
Process analog	***Number***	1	
	Function	acquisition of process variable	
Sensor type	***Thermocouple***	TC: J,K,T,N,R,S,B,E internal cold junction compensation	
	Resistance thermometers	RTD: PT100 DIN43760	
	Thermistor	PTC: 990Ω@25°C on request	
	Linare corrente	V voltage: 0...60mVdc,0...10Vdc	
	Linear current	I current: 0/4...20mA	
	Sampling time	120 ms	
	Accuracy	0,2% fs±1 digit	
	Resolution	< 4µV on 60mV, < 0,8mV on 10Vdc	
	Linearization	< 0,1% FS	
	Input filter	0...20,0 sec	
Auxiliary analog	***Number***	-	1
	Function	-	read: current absorbed by load
	Sensor type	-	Current transformer 0...50mAac <20Ω
Auxiliary digital	***Number***	-	
	Function	-	
	Type	-	
OUTPUTS			
	Number	min.2 max.3	
	Out. 1 Type	R,D	
	Out. 2 Type	R,D	
	Out. 3 Type	-	R,D alternative to auxiliary analog input
	Out. 4 Type	-	-
	Out. 5 Type	-	-
	Out. 6 Type	-	-
	Function	heating, cooling, alarm	
	Type description	R Relay: NO/NC,max 5A,250Vac/30Vdc (resistive load) D Digital: 24Vdc,30mA, Rout:100Ω T Triac: 20...240Vac±10%V, 50/60Hz, 1A max. snubberless	
	Transmitter power supply	-	
DISPLAY / KEYBOARD			
Display	***Number***	1	
	Color	green	
	Display range	-1999...9999	
	Keyboard	4 keys	
FUNCTIONS			
	Main input diagnostics	sensor open or in short circuit (SBR)	
	Main output diagnostics	control loop open (LBA)	
	Aux. analogue input diagnostics	-	load interrupted (HB)
	Regulation	P, PD, PI, PID, on/off - single action heat or cool / double action heat + cool	
	Tuning	selftuning, autotuning,	
	Alarms no./	max.2	max.3
	Types	absolute, relative, symmetrical, direct, inverse	
SERIAL COMMUNICATION			
	Type	-	
	Protocol	-	
GENERAL DATA			
	Format	48x48 (1/16 DIN)	
	Depth	99mm	
	Front protection	IP65	
	Mounting	removable panel	
	Power supply	100...240Vac ±10% opt. 11...27Vac ±10% 50/60Hz, 10VA max	
	Certifications	CE, UL	

600	1200	1300	600 OF
1			
acquisition of process variable			
TC: J,K,T,R,S, custom, internal cold junction compensation			TC: J,K,T,R,S, custom, internal cold junction compens.
RTD: PT100 DIN43760, PT100,custom			RTD: PT100 DIN43760, PT100,custom
PTC,NTC 990Ω@25°C/1KΩ@25°C			PTC,NTC 990Ω@25°C/1KΩ@25°C
V voltage: 0...60mVdc,0...10Vdc custom			V voltage: 0...60mVdc,0...10Vdc custom
I current: 0/4..20mA, custom			I current: 0/4..20mA, custom
120 ms			0-120 ms
0,2% fs±1 digit			
< 2µV su 60mV, < 0,4mV su 10Vdc			<2mV su 60mV, <0,4mV su 10Vdc
< 0,1% FS			
0...20,0 sec			
1			-
read: current absorbed by load			-
Current transformer 0...50mAac <20Ω			-
1	2		-
configurable (man/auto,loc/rem,hold...)			
NPN 4,5mA, PNP 5mA 24Vdc isol.1500V			-
min.2 max.4			5
R			R, D
R,D,T			R
none, R,D,C,W alternative to auxiliary input	none, R,D,C,W		R
none, R, alternative to serial line	none, R, D		R
-			buzzer
-			D
heating, cooling, alarm			
R Relay: NO/NC,max 5A,250Vac/30Vdc __(resistive load) D Digital: 24Vdc,30mA, Rout:100Ω T Triac: 20...240Vac±10%V, 50/60Hz, 1A max. snubberless C Continue: 0...10Vdc, 0/4...20mA 500Ω not isolated W Continue: 0...10Vdc, 0/4...20mA 500Ω isolated			
2 wires, 15/24Vdc±10%, 50mA short-circuit protection			-
2			
green,			
-1999...9999			
4 keys			
sensor open or in short circuit (SBR)			
control loop open (LBA)			
load interrupted (HB)			control loop open (LBA)
P, PD, PI, PID, on/off - single action heat or cool / double action heat + cool			
selftuning, autotuning, autotuning single action - (**600-0F**: 3 steps for set profile)			
max.3 absolute, relative,			
symmetrical, direct, inverse, latching or non-latching			
RS485			RS485 (on request)
Modbus RTU / Cencal GEFRAN			Modbus RTU
48x48 (1/16 DIN)	48x96 (1/8 DIN)	96x96 (1/4 DIN)	90x45
99mm	100mm		45mm
IP65			-
removable panel			rear panel
switching 100...240Vac ±10% opt. 11...27Vac ±10% 50/60Hz 8VA	switching 100...240Vac ±10% 50/60Hz 18VA opt. 11...27Vac ±10% 50/60Hz 11VA		switching 100...240Vac ±10% 50/60Hz 8VA
CE, UL			CE

ADVANCED MODELS

		800	1600	1800
INPUTS				
Process analog	***Number***	1		
	Function	acquisition of process variable		
Sensor type	***Thermocouple***	TC: J,K,T,N,R,S,B,E,N,L(GOST),Ni-Ni18Mo, custom, internal cold junction compensation		
	Resistance thermometers	RTD: PT100 DIN43760,JPT100,custom		
	Thermistor	PTC: 990Ω@25°C, custom		
	Linare corrente	V voltage: 0...60mVdc,0...10Vdc custom		
	Linear current	I current: 0/4...20mA custom		
	Sampling time	120 ms		
	Accuracy	0,2% fs±1 digit		
	Resolution	< 1µV on 60mV, < 0,2mV on 10Vdc		
	Linearization	< 0,1% FS		
	Input filter	0...20,0 sec		
Auxiliary analog	***Number***	1		
	Function	read: current absorbed by load - linear input, potentiometer		
	Sensor type	Current transfomer 0...50mA 50/60HZ - linear voltage 0/2...10V, Ri>1MΩ, linare corrente 0/4...20mA, Ri=5Ω - pot. > 500Ω		
Auxiliary digital	***Number***	2 (second input alternative to output 5)		
	Function	configurable (man/auto,loc/rem,hold...)		
	Type	NPN 4,5mA, PNP 3,6mA 24V isol.1500V		
OUTPUTS				
	Number	min.2 max.5	min.2 max.6	
	Out. 1 Type	R,D	R,D	
	Out. 2 Type	R,D	R	
	Out. 3 Type	none, R, D	R	
	Out. 4 Type	none, R, V, I	none V, I	
	Out. 5 Type	none, V, I alternative Second digital input alternative	none V, I	
	Out. 6 Type	none	none V, I	
	Function	heating, cooling, alarm		
	Type description	R Relay: NO/NC, max.5A, 250V __(resistive load) D Digital: 12Vdc, 20mA, Rout 220Ω V Analog: 0...10Vdc 500Ω Resolution 12bit I Analog: 0/4..20mA 500Ω isolated Resolution 12bit		
	Transmitter power supply	2wires, 10Vdc/24Vdc, 30mA short-circuit protection, isolated		
DISPLAY / KEYBOARD				
Display	***Number***	2		
	Color	verde		
	Display range	-1999...9999		
	Keyboard	4 keys		
FUNCTIONS				
	Main input diagnostics	sensor open or in short circuit (SBR)		
	Main output diagnostics	control loop open (LBA)		
	Aux. analogue input diagnostics	load interrupted (HB)		
	Regulation	P, PD, PI, PID, on/off - single action heat or cool - double action heat + cool		
	Tuning	selftuning, autotuning, single action		
	Alarms no./ Types	max. 5 absolute, relative, symmetrical, direct, inverse		
SERIAL COMMUNICATION				
	Type	RS232-RS422/485 - current loop, optoisolated, 4 wires		
	Protocol	Modbus RTU - Cencal GEFRAN		
GENERAL DATA				
	Format	48x48 (1/16 DIN)	48x96 (1/8 DIN)	96x96 (1/4 DIN)
	Depth	129mm	115mm	
	Front protection	IP65		
	Mounting	removable panel		
	Power supply	switching 100...240Vac/dc ±10% opt. 20...27Vac/dc ±10% 50/60Hz, 12VA max		
	Certifications	CE, RINA	CE, UL	

		800V	1600V	1800V
INPUTS				
Process analog	***Number***	1		
	Function	acquisition of process variable		
Sensor type	***Thermocouple***	TC: J,K,T,N,R,S,B,E,N,L(GOST),Ni-Ni18Mo, custom, internal cold junction compensation		
	Resistance thermometers	RTD: PT100 DIN43760,JPT100,custom		
	Thermistor	-		
	Linare corrente	V voltage: 0...60mVdc,0...10Vdc custom		
	Linear current	I current: 0/4...20mA custom		
	Sampling time	120 ms		
	Accuracy	0,2% fs±1 digit		
	Resolution	< 1µV on 60mV, < 0,2mV on 10Vdc		
	Linearization	< 0,1% FS		
	Input filter	0...20,0 sec		
Auxiliary analog	***Number***	1		
	Function	read: current absorbed by load - linear input, potentiometer		
	Sensor type	Current transfomer 0...50mA 50/60HZ - linear voltage 0/2...10V, Ri>1MΩ, Linear current 0/4...20mA, Ri=5Ω - pot. > 500Ω		
Auxiliary digital	***Number***	2 (second input alternative to output 5)		
	Function	configurable (man/auto,loc/rem,hold...)		
	Type	NPN 4,5mA, PNP 3,6mA 24V isol.1500V		
OUTPUTS				
	Number	min.2 max.5	min.2 max.6	
	Out. 1 Type	R	R, D	
	Out. 2 Type	R	R	
	Out. 3 Type	none, R, D	R	
	Out. 4 Type	none, R, V, I	none V, I	
	Out. 5 Type	none, V, I alternative Second digital input alternative 2	none V, I	
	Out. 6 Type	none	none V, I	
	Function	Open, close, heating, cooling, alarm		
	Type description	R Relay: NO/NC, max.3A, 250V __(resistive load) D Digital: 12Vdc, 20mA V Analog: 0...10Vdc 500Ω isolated 12bit I Analog: 0/4..20mA 500Ω isolated 12bit		
	Transmitter power supply	10Vdc/24Vdc, 30mA short-circuit protection, isolated		
DISPLAY / KEYBOARD				
Display	***Number***	2	2 + bargraph	
	Color	green,	green, red	
	Display range	-1999...9999		
	Keyboard	4 keys	5 keys	
FUNCTIONS				
	Main input diagnostics	sensor open or in short circuit (SBR)		
	Main output diagnostics	control loop open (LBA)		
	Aux. analogue input diagnostics	load interrupted (HB)		
	Regulation	P, PD, PI, PID, on/off - single action heat or cool - double action heat + cool Tree step motorized valves (with or without position feedback)		
	Tuning	selftuning, autotuning,		
	Alarms no./ Types	max. 5 absolute, relative, symmetrical, direct, inverse		
SERIAL COMMUNICATION				
	Type	RS232-RS422/485 - current loop, optoisolated, 4 wires		
	Protocol	Modbus RTU - Cencal GEFRAN		
GENERAL DATA				
	Format	48x48 (1/16 DIN)	48x96 (1/8 DIN)	96x96 (1/4 DIN)
	Depth	129mm	115mm	
	Front protection	IP65		
	Mounting	removable panel		
	Power supply	switching 100...240Vac/dc ±10% opt. 20...27Vac/dc ±10% 50/60Hz, 12VA max		
	Certifications	CE, RINA	CE, UL	

ADVANCED MODELS

		800P	1600P	1800P
INPUTS				
Process analog	***Number***	1		
	Function	acquisition of process variable		
Sensor type	***Thermocouple***	TC: J,K,T,N,R,S,B,E,N,L(GOST),Ni-Ni18Mo, custom, internal cold junction compensation		
	Resistance thermometers	RTD: PT100 DIN43760,JPT100,custom		
	Thermistor	-		
	Linare corrente	V voltage: 0...60mVdc,0...10Vdc custom		
	Linear current	I current: 0/4...20mA custom		
	Sampling time	120 ms		
	Accuracy	0,2% fs±1 digit		
	Resolution	< 1µV on 60mV, < 0,2mV on 10Vdc		
	Linearization	< 0,1% FS		
	Input filter	0...20,0 sec		
Auxiliary analog	***Number***	1		
	Function	read: current absorbed by load - linear input, potentiometer		
	Sensor type	TA 0...50mA 50/60HZ lin. voltage 0/2...10V, Ri>1MΩ, lin. current 0/4...20mA, Ri=5Ω - pot. > 500Ω	0...50mA ac <20Ω - 0/4...20mA 0..10Vdc > 1MΩ - 100...1000Ω isol.1500V	
Auxiliary digital	***Number***	2 (second input alternative to output 5)		
	Function	configurable (man/auto,loc/rem,hold...)		
	Type	NPN 4,5mA, PNP 3,6mA 24V isol.1500V		
OUTPUTS				
	Number	min.2 max.5	min.2 max.6	
	Out. 1 Type	R, D	R, D	
	Out. 2 Type	R, D	R	
	Out. 3 Type	none, R, D	R	
	Out. 4 Type	none R, V, I	none, R, D	
	Out. 5 Type	none, V, I alternative Second digital input alternative	none V, I	
	Out. 6 Type	none	none V, I	
	Function	Open, close, heating, cooling, alarm		
	Type description	R Relay: NO/NC, max.3A, 250V __(resistive load) D Digital: 12Vdc, 20mA V Analog: 0...10Vdc 500Ω isolated 12bit I Analog: 0/4..20mA 500Ω isolated 12bit		
	Transmitter power supply	2 wires, 10Vdc/24Vdc, 30mA short-circuit protection, isolated		
DISPLAY / KEYBOARD				
Display	***Number***	2	2 + baragraph	
	Color	green,	green, red	
	Display range	-	-1999...9999	
	Keyboard	4 keys	5 keys	
FUNCTIONS				
	Main input diagnostics	sensor open or in short circuit (SBR)		
	Main output diagnostics	control loop open (LBA)		
	Aux. analogue input diagnostics	load interrupted (HB)		
	Regulation	P, PD, PI, PID, on/off - single action heat or cool - double action heat + cool	P, PD, PI, PID, on/off - single action heat or cool - double action heat + cool Tree step motorized valves (with or without position feedback)	
	Tuning	selftuning, autotuning, single action		
	Alarms no./ Types	max. 5 absolute, relative, symmetrical, direct, inverse		
PROGRAMMER di set	***Nr. Programs***	4		
	Nr. passi	up to 16 steps		
SERIAL COMMUNICATION				
	Type	RS232-RS422/485 - current loop, optoisolated, 4 wires		
	Protocol	Modbus RTU - Cencal GEFRAN		
GENERAL DATA				
	Format	48x48 (1/16 DIN)	48x96 (1/8 DIN)	96x96 (1/4 DIN)
	Depth	129mm	115mm	
	Front protection	IP65		
	Mounting	removable panel		
	Power supply	switching 100...240Vac/dc ±10% opt. 20...27Vac/dc ±10% - 50/60Hz, 12VA max		
	Certifications	CE, RINA	CE, UL	

HIGH-PERFORMANCES

		2500	GFXTERM04
INPUTS			
Process analog	***Number***	1 (2)	4
	Function	acquisition of process variable	
Sensor type	***Thermocouple***	Strain gauge: 350, sensibility 1,5...4mV/V with probe power supply 5/10Vdc. Potentiometer: £100Ω, Ri>10MΩ-@2,5Vdc DC linear:±60mV, ±100mV, Ri>10MΩ, ±60mV, ±100mV, Ri> 10MΩ - TC	J,K,T,R,S, custom, internal cold junction compensation
	Resistance thermometers		PT100 DIN43760, PT100, custom
	Linare corrente		0/12...60mV, Ri>1MΩ, 0/0,2...1V, Ri>1MΩ, custom 60mV
	Linear current		0/4...20mA, Ri=50Ω, custom 20mA a 32 segments
	Sampling time	2 ms	120ms
	Accuracy	0,1% fs ±1 digit	0,2% fs ±1 scale point at 25°C
	Resolution	< 0,6µV on 60mV, < 0,1mV on 10Vdc	-
	Input filter	0...20,0 sec	
Auxiliary analog	***Number***	2	4
	Function	remote set, offset, mathematics	Read: current absorbed by load - linear input - TC
	Sensor type	Potentiometer: 1...10KΩ-@10Vdc DC linear 10V, Ri>2mΩ, 0/4...20mA, Ri=50Ω	External CT 50mAac; 50/60Hz, Ri = 10Ω Range voltage 0/12...60mV, Ri > 1MΩ TC J, K, R, S, T, custom
Auxiliary digital	***Number***	from 2 to 6	1
	Function	configurable	configurable (man/auto,loc/rem,hold, prg ..)
	Type	NPN 5mA - PNP 5mA 24Vdc isolati	PNP, 24Vdc, 8mA (isol. 3500V)
OUTPUTS			
	Number	4	min.6 max.10
	Out. 1 Type	none, R,D,V,I - alternative R power supply	D
	Out. 2 Type	none, R,D,V,I transmitter power supply alternative R alternative	D
	Out. 3 Type		D
	Out. 4 Type		D
	Out. 5 Type	-	O,R,D,C,T
	Out. 6 Type	-	O,R,D,C,T
	Out. 7 Type	-	O,R,D,C,T
	Out. 8 Type	-	O,R,D,C,T
	Out. 9 Type	-	R
	Out. 10 Type	-	R
	Function	heating, cooling, alarm	
	Type description	24Vdc, 100mA	-
	Transmitter power supply	10Vdc, bridge resistance 250mA	-
DISPLAY / KEYBOARD			
	Color	green, red	-
	Keyboard	6 keys	-
FUNCTIONS			
	Main input diagnostics	sensor open or in short circuit (SBR)	
	Main output diagnostics	control loop open (LBA)	
	Aux. analogue input diagnostics	load interrupted (HB)	
	Regulation	P, PD, PI, PID, on/off, - single action heat or cool, double action heat + cool	
	Tuning	selftuning, autotuning, autotuning single action	
	Alarms no./ Types	max 10	max.8, absolute, relative, symmetrical, direct, inverse, latching or non-latching
SERIAL COMMUNICATION			
	Serial 1	optional	always present
	Type	RS485	RS485
	Protocol	-	Modbus RTU
	Serial 2	-	optional
	Type	-	according to protocol
	Protocol	Modbus RTU, Profibus	Profibus DP, CANopen, DeviceNet, Modbus TCP, Modbus RTU, Ethernet IP, EtherCAT, Profinet
GENERAL DATA			
	Power supply	switching 100...240Vac/dc ±10% option 20...27Vac/dc ±10% 48/62Hz, max 15VA	24Vdc ±25%, 5VA max
	Certifications	CE, UL	

HIGH-PERFORMANCES

GF_PROMER 3.5" & 5.7"

Distributed solution with series GFX modules

	GFX1	GFX2	GFX4 / GFX4-IR	GFXTERMO4
INPUTS (per module)				
Process analog ***Number of PID loops***	1	1	4	4
Function	Acquisition of process variable			
Sensor type ***Thermocouple***	J,K,R,S,T, TC custom (32 pti), internal cold junction compensation			
Resistance thermometers	PT100 DIN 43760, PT100 custom (32 pti)			
Tensione	0/12...60mV, Ri>1MΩ; 0/0,2...1V, Ri>1MΩ; 0-60mV custom (32 pti)			
Corrente	0/4-20mA, Ri=50Ω, mA custom (32 pti)			
Sampling time	120 msec.			
Accuracy	0,2% f.s. ±1 scale point at 25°C			
Input filter	0...20,0 sec			
Auxiliary analog ***Number***	0	1	4TA / 4 AUX	
Function	-	Feeedback pot	Read external CT/visual.AUX	
Sensor type	-	Potentiometer min...max.	50mAac; 50/60Hz, Ri=10Ω / TC 0-60mV	
OUTPUTS (per module)				
Control analog ***Number***	-	2	4	4
Function	Heating/Cooling control outputs			
Type description	0-10V, 0/4-20mA			
Digital/Relay ***Number***	max 4	max 4	max 6	max 10 (max 6 Relay)
Function	Heat / Cool / Alarms / Event outputs			
DISPLAY				
Dimensioni	3,5" and 5,7"			
Type	display LCD TFT colors, 1/4 VGA, touch screen			
Keyboard	resistive touch screen, 6 mechanical keys, pressed key feedback (mod. 35CT)			
FUNCTIONS	data display, programmed setpoint graphics, PV+SP graphics, PV+SP bargraph Pout% bargraph, alarms, password, RTC calendar			
FUNCTIONS				
Main input security	sensor open or in short circuit (SBR)			
Main output security	control loop open (LBA)			
Actuator/load safety	load interrupted alarm (even partial) with inputs from CT and alarm outputs			
Regulation	ON/OFF, Proportional (P), Proportional Derivative (PD), Proportional Integral Derivative (PID) Heat, Cool, Heat/Cool with double independent PID			
Tuning	selftuning, autotuning, one shot autotuning			
PROGRAMMER				
Programs	100 Programs			
Steps	300 steps			
Program repetition	infinite			
Steps repetition	infinite			
Clearance inputs	up to max 16 (with optional modules)			
Event OUTPUTS	up to max 16 (with optional modules)			
Logical FUNCTIONS	100 logical blocks (AND, OR, TIMER, TRIGGER) configurable			
Save config. parameters	to internal solid disk, can be copied to USB flash drive			
Save recipes	to internal solid disk, can be copied to USB flash drive			
SERIAL COMMUNICATION				
Type	RS485, Ethernet port			
Protocol	Modbus RTU, Modbus TCP			
GENERAL DATA				
Format	96x96mm (3,5") / 169x120mm (5,7")			
Front protection	IP65			
Mounting	panel-mounted (and on DIN rod for control modules)			
Power supply	24V dc			
Certifications	CE, UL			

GF_LOOPER 3.5" & 5.7"

Distributed solution with series GFX modules

	GFX4 / GFX4-IR	GFXTERMO4
INPUTS (per module)		
Process analog ***Number of PID loops***	4	4
Function	Acquisition of process variable	
Sensor type ***Thermocouple***	J,K,R,S,T, TC custom (32 pti), internal cold junction compensation	
Resistance thermometers	PT100 DIN 43760, PT100 custom (32 pti)	
Tensione	0/12...60mV, Ri>1MΩ; 0/0,2...1V, Ri>1MΩ; 0-60mV custom (32 pti)	
Corrente	0/4-20mA, Ri=50Ω, mA custom (32 pti)	
Sampling time	120 msec.	
Accuracy	0,2% f.s. ±1 scale point at 25°C	
Input filter	0...20,0 sec	
Auxiliary analog ***Number***	4TA / 4 AUX	
Function	Read external CT/visual.AUX	
Sensor type	50mAac; 50/60Hz, Ri=10Ω / TC 0-60mV	
OUTPUTS (per module)		
Control analog ***Number***	4	4
Function	Heating/Cooling control outputs	
Type description	0-10V, 0/4-20mA	
Digital/Relay ***Number***	max 6	max 10 (max 6 Relay)
Function	Heat / Cool / Alarms	
DISPLAY		
Dimensioni	3,5" e 5,7"	
Type	display LCD TFT colors, 1/4 VGA, touch screen	
Keyboard	resistive touch screen, 6 mechanical keys, pressed key feedback (mod. 35CT)	
FUNCTIONS	data display, PV+SP graphics, PV+SP bargraph, Pout% bargraph, alarms, password, RTC calendar	
FUNCTIONS		
Main input security	sensor open or in short circuit (SBR)	
Main output security	control loop open (LBA)	
Actuator/load safety	load interrupted alarm (even partial) with inputs from CT and alarm outputs	
Regulation	ON/OFF, Proportional (P), Proportional Derivative (PD), Proportional Integral Derivative (PID) Heat, Cool, Heat/Cool with double independent PID	
Tuning	selftuning, autotuning, one shot autotuning	
MULTILOOP		
Number of loops	da 4 a 16	
GFX communications	with Modbus RTU (RS485)	
Double setpoint SP/SP2	available	
UP/DOWN SP working	available	
ON/OFF single Loop	available	
Data logging	available with export of csv data	
Multilanguage	available	
Save config. parameters	to internal solid disk, can be copied to USB flash drive	
Save recipes	to internal solid disk, can be copied to USB flash drive	
SERIAL COMMUNICATION		
Type	RS485, port Ethernet	
Protocol	Modbus RTU, Modbus TCP	
GENERAL DATA		
Format	96x96mm (3,5") / 169x120mm (5,7")	
Front protection	IP65	
Mounting	panel-mounted (and on DIN rod for control modules)	
Power supply	24V dc	
Certifications	CE, UL	

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